REMARKS

Responsive to the Final Action issued December 11, 2009, Applicant respectfully requests that the Office kindly amend the application as detailed above and consider the following responses.

Rejection under 35 U.S.C. 103(a)

Claims 1-10, 12, 14-17 and 24-37 were rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Markovsky (6,319,466) in view of Charm (4,239,745).

To establish a prima facie case of obviousness under 35 U.S.C. §103, the prior art reference must teach or suggest every limitation of the claim. MPEP §2143.01 If an independent claim is non-obvious, then any dependent claims stemming from that independent claim are also non-obvious. MPEP §2143.03. Applicant respectfully asserts that the prior art does not teach or suggest every limitation of claim 1-10, 12, 14-17 and 24-37. Neither Markovsky, nor Charm, alone or combined, teach or suggest using a bacteria that is sensitive to beta-lactams for both detection of antibiotics, including beta-lactams, in a microbial growth inhibition test and adjustment of sensitivity to all or a group of beta-lactams, such as the penicillins, including penicillin G. Furthermore, neither Markovsky, nor Charm, alone or combined, teaches adjusting sensitivity in a microbial growth inhibition assay.

The Combination of Markovsky and Charm is Unobvious

Even assuming, for the sake of argument, that combining Markovsky and Charm provides the solution disclosed and claimed in the current application, when confronting the problem of a microbial culture growth inhibition test that is overly sensitive to certain antibiotics but not all antibiotics to which the test is sensitive, it would not be obvious, to one skilled in the art, to combine the teachings of Markovsky and Charm.

International Publication Number WO 2005/005656, PCT/EP2004/007293, *Improved Method for the Determination of the Presence of an Antibiotic in a Fluid*, International Filing Date July 1, 2004, Priority Date July 2, 2003, Langeveld, Pieter, Cornelis, (hereinafter Langeveld) states: "The problem with the test systems currently distributed on the market and/or described in the literature is that they do not provide a simple procedure by which the sensitivity towards certain analytes can be adapted." After describing the problem, Langeveld describes a wholly different solution for adjusting test sensitivity. That one skilled in the art, confronted with the same problem as Applicant, looked elsewhere for a solution is evidence of the nonobviousness of Applicant's approach.

Withdrawal of the rejections of claims 1-10, 12, 14-17, 24-37 is respectfully requested.

Charm Teaches Away From the Use of Microbial Growth Inhibition Assays

The test described in Charm relies on a binding reaction between the antibiotic sensitive cells and the antibiotic. The focus is on speed of testing and sensitivity. The focus on speed of testing (for example column 1, lines 38-43 and column 2, lines 1-5) in Charm would lead one skilled in the art away from microbial growth inhibition assays. For example, the present application describes a test that takes 1.5 hours to 4 hours (for example paragraph [0007]). Charm's focus on speed would clearly point one skilled in the art away from microbial growth inhibition assays.

Withdrawal of the rejections of claims 1-10, 12, 14-17, 24-37 is respectfully requested.

Claims 30-37

Examiner addressed the patentability of claims 30-37 in the office action dated January 28, 2009. Examiner states, "with reference to claims 3-5, 8, and 30-37, that it

would have been obvious to select buffers and pH ranges because adjusting such basic parameters in culturing are standard practice to optimize growth. No function of any of the buffers or pH ranges are claimed."

Applicant has amended claims 30 and 35-37 to state that the function of the chosen pH ranges is to increase storage time and increase test stability after test operation. As described in paragraphs [0039] through [0043] and elsewhere in the specification, by utilizing buffers in two pH ranges applicant can both maintain the relatively high pH in an appropriate range as required for pretesting storage and maintain the relatively low pH within a range required to maintain the color change within the readable range for the test. That is, as bacteria growth occurs the test turns negative and the color indicator reflects that. If the test turns too acidic the color will change again. The inhibition type tests typically take approximately 2-4 hours. Ease of use requires that the test be stable and not require immediate reading. The low pH buffer provides enough post-test stability while not overbuffering. Overbuffering might prevent the test from becoming acidic as bacteria grow during normal test operation. This use of a dual buffering is not described or suggested in the prior art and is a nonobvious variation from the prior art.

Withdrawal of the rejections of claims 30-37 is respectfully requested.

Rejection for Lack of Support in the Specification for the Amended Claims

Examiner states that none of the features argued are now found in the claims. Examiner also states that the specification does not teach reducing sensitivity to beta-lactam antibiotics while increasing sensitivity to other antibiotics. Examiner refers to the statement in paragraph No. 14 of the Declaration of Robert S. Salter, that "[a] reason for reducing sensitivity to all beta-lactams is to allow the test sensitivity to be increased for other drugs...." Salter was stating that using the microbial receptor allows selectively reducing sensitivity to certain drugs. Sensitivity to drugs not affected, or less affected, by the microbial receptor, can, thereby, be increased relative to the affected drug. Such test sensitivity increase can be achieved by changing other aspects of the test.

The specification shows that sensitivity can be reduced to penicillin G without affecting sensitivity to certain other drugs. The specification also provides support for reducing test sensitivity to penicillin G while increasing test sensitivity to an antibiotic other than penicillin G.

Tables 1, 2 and 3 all show the ability of the test to reduce sensitivity to penicillin G, a beta-lactam antibiotic. Table 2 shows reduction of sensitivity to penicillin without affecting sensitivity to other drugs. A comparison of tables 4 and 5 shows little difference except increased sensitivity to ceftiofur and its metabolites.

One difference between the formulations in Examples 6 and 7, the results of which are shown in tables 4 and 5, is the culture media change, including changing borate succinate to Trizma succinate. The opening paragraphs of Examples 6 [0059] and 7 [0065] both describe using the culture formulation described therein with the sensitivity adjustment examples. Such sensitivity adjustment examples include reducing the sensitivity to penicillin as shown in Tables 1, 2 and 3.

Test sensitivity to ceftiofur, and its metabolites, a non-penicillin beta-lactam, is increased in Example 7 (compare tables 4 and 5). As shown in Examples 1, 2 and 3, penicillin G sensitivity is reduced by the presence of the receptor.

The specification contains all aspects of a method for increasing test sensitivity to certain antibiotics – i.e. ceftiofur and its metabolites – relative to other antibiotics, for example penicillin G.

Applicant has amended claim 1 to reflect that test sensitivity to penicillin G is reduced relative to another antibiotic, the example in the specification being sensitivity to ceftiofur and its metabolites.

Withdrawal of the rejections of claims 1-10, 12, 14-17, 24-37 is respectfully requested.

CONCLUSION

Applicant believes that the above amendments and remarks are fully responsive to the Office Action, thereby placing this application in condition for allowance and such action is respectfully requested. Applicant respectfully notes that because Applicant has addressed certain comments of the Office does not mean that Applicant concedes other comments of the Office. Further, the fact that Applicant has made arguments for the patentability of some claims does not mean that there are not other good reasons for the patentability of those or other claims.

Applicant requests speedy reconsideration, and further requests that the Examiner contact its attorney if there are any remaining issues.

Please charge any outstanding fees or credit any overpayments to Deposit Account No. 50-3152, Ref. No. 0656-032US3A.

Respectfully submitted,
/richardjlong/
Richard J. Long
Reg. No. 48,252
Date: 06/09/10

Charm Sciences, Inc.
659 Andover Street
Lawrence, MA 01843-1032
Telephone: 978 687-9200
Facsimile: 978 687-9216